

Advanced Research Methods
Spring 2023
Syllabus

CRN: GR 30233

Credits: 2

Days & Times***: 1st Intensive Weekend Week 3 Fri Apr. 21, 6-9:30p, Sat Apr. 22, 10a-4p, Sun Apr. 23, 10a-4p; Week 6 Fri May 12, 6-9:30p, Sat May 13, 10a-4p, Sun May 14, 10a-4p

Faculty: Wenhong Wang, Ph.D., wangw@evergreen.edu

Location: Zoom*

***** Please reserve these days for class related work.**

Course description:

Data does not happen in a vacuum. No aspect of research or data analysis are outside of the established social system. This course will examine statistical tools in social context through the lens of equity. We will try to answer questions: How can we tell whether the data we come across is correct or not? What are the social impacts of data? How can we use data to inform social policy and effect social change? The focus will be on learning ways to investigate the complexities of data analysis and data interpretation from different perspectives. The course will cover descriptive statistics and inferential statistics using Excel. We are also going to discuss the differences between frequentist and Bayesian approaches to inference.

The course will meet for two intensive weekends though assignments will be assigned throughout the quarter including responses to readings and statistics homework. A final research project will be due at the end of the quarter.

Learning objectives:

By the end of the course, students will be able to

1. Use statistical tools to interpret data
2. Critically evaluate data especially their social implications
3. Conduct basic statistical analysis of raw data using Excel or other software
4. Communicate quantitative information to different audiences
5. Develop confidence and readiness for furthering knowledge and skills in quantitative reasoning
6. Develop metacognitive insights in learning about learning

List of topics to be covered: descriptive and inferential statistics

- Why we study statistics
- What statistics can do and what statistics cannot do
- Organization of information: frequency distribution
- Measures of central tendency
- Measures of variability
- The normal distribution
- Probability
- Sampling and sampling distribution
- Estimation

- Testing hypotheses
- T-test, Chi-Square Test
- Differences between frequentist and Bayesian statistics

Required texts:

Social Statistics for a Diverse Society, 8th Edition by Chava Frankfort-Nachmias & Anna Leon-Guerrero (2017). ISBN: 9781506347202. You can get other editions but no older than the 6th edition and make sure you have the 8th edition exercises at the end of the chapters.

We are also going to read selected book chapters on research and data analysis which will be posted on Canvas.

Pedagogy:

This course adopts a **trauma informed pedagogy**, recognizing various traumas and shame that many of us have carried through lived experiences, related to math learning, and otherwise, especially due to systemic inequities in the educational system. This course also holds a **growth mindset** that believes in everyone's ability to learn, advance and gain competency regardless of a person's current learning status.

This course values the strength and power of a **learning community** that promotes each others' learning and value what each member as an **asset** has to offer to the learning community. We will intentionally cultivate space for community building and to support each other's growth in competence and confidence and appreciation for each other.

Start where you are but do not stay there. Let's grow together!

Some tips on how to learn better:

1. Keep up with the course material, readings and end of chapter exercises from the BEGINNING of the quarter.
2. Form study groups to discuss your learning together.
3. Ask questions. Odds are if you have a question, the person sitting next to you may have the same question in mind too.
4. Make the best use of class time. Be engaged.
5. Do not be afraid. If you are afraid, turn that fear into action.
6. Any other tips that your peers might share.

Special accommodations:

If you are a student with disability who would benefit from support or services to ensure full access to this course, please contact Access Services in Library 2120 in the Student Advising Center, Tel: 360-867-6348. In order for your course faculty to make accommodations, we must be informed no later than the second week of the quarter by the student and in writing from Access Services.

Resources:

1. The textbook website: edge.sagepub.com/frankfort8e. This website provides you with a lot of study tools to help you master the materials covered in class.
2. Videos of various kinds and of course, the good old Khan Academy: www.khanacademy.org.
3. Wen's office hours: Wed. 11:00am-12:00pm on Zoom
4. Statistics and Excel tutoring from QuaSR center
In-person.
 - a. Statistics 1 Monday to Thursday 1pm-7pm; Friday 12pm – 4pm
 - b. Statistics 2 Monday 4pm – 7pm, Tuesday 2pm – 6pm, Wednesday 1pm -5pm, Friday 12pm – 4pm
 - c. Excel: Monday to Thursday 1pm-7pm; Friday, Sunday 12pm – 4pmOn Zoom: <https://www.evergreen.edu/mathcenter/tutoring-times-subject>.

Class format:

This class adopts a **flipped classroom** format. You are going to watch videos, read the chapter BEFORE coming to class. The class time during intensive weekends will be devoted to practice workshops, Q&A sessions, discussions about the implications of different methods, and time to work on your research project. **Please finish the preparation work before coming to class. This is going to be an important part for the learning of the entire learning community as well as your own learning.**

Brief assignment descriptions:

We will have regular **assignments** and a **mini research project** for this course. **All assignments will be turned in on Canvas.** Statistics is a subject you can only improve by repeated practices. So take every assignment seriously. For homework, I will assign either problems at the end of the chapters or something from the textbook website or from other sources. **Typing is preferable. If you don't type, please write legibly and turn in an image of your work on Canvas.**

Course expectations and credit:

***** All your written work should be submitted to Canvas, typed in Times New Roman font, 12 points, double-spaced, using APA citation style.** To learn APA Style, check American Psychological Association website: <http://www.apastyle.org/learn/index.aspx> or Purdue Writing & Grammar Guide <http://owl.english.purdue.edu/>. Check for grammatical and spelling mistakes before turning in your work. If needed, students are encouraged to work with The Writing Center.

You will be evaluated in this course based on your progress in meeting the course objectives described above, as assessed by the following assignments and requirements. **You will be awarded 2 graduate credits upon meeting all the requirements of the course.** To earn full credit for the course, students must satisfactorily meet all the following requirements:

1. **Participation, preparatory work and discussion:** Students must attend all the class sessions in its entirety, and come fully prepared having finished readings, videos, assignments and other preparatory work. Students should actively participate in class workshops, synchronous and asynchronous discussions and other activities. As members of the learning community, your participation is essential for the learning of the entire class besides your own. If you are unable to attend class, please discuss this with faculty in advance to find a way to make up the work.
2. **Final mini research project.**
See the end of this document for details.
3. **Weekly homework assignments, videos and questions, and occasional posts on readings, and reflections.**

*****Late assignments:** Turning in assignments on time is essential especially before intensive weekends. However, if there is an unavoidable need to turn in an assignment late, the student should contact the faculty no later than the original assignment due date to discuss options.

Evaluation: A written self-evaluation and faculty evaluation are required for credit. All final evaluations are to be submitted via my.evergreen.edu by 6/12. An evaluation conference will be held at the end of the quarter.

Academic integrity: Plagiarism (i.e., using other peoples' work as your own) may result in total loss of credit for the class and may result in dismissal from the MPA program. See the MPA Handbook and College statement on academic honesty for more information.

Multiculturalism and diversity: Faculty and students will actively work towards contextually weaving multiculturalism and diversity throughout our learning as related to

readings, lectures, workshops, seminar, and other class activities. In a learning community students and faculty share the responsibility for the teaching and learning environment. Multiculturalism and diversity is to be understood as: aiming to promote constructive community discourse about issues of culture, power, and differences including but not limited to race, ethnicity, color, nationality, sex, gender, gender identity, gender expression, class, sexual orientation, age, religion, (dis)ability, and veteran status.

Accessibility: If you are a student with disability who would benefit from support or services to ensure full access to this course, please contact Access Services at 360-867-6348 or accessservices@evergreen.edu as soon as possible and get in contact with faculty for possible accommodation. For more information, please visit the Access Services website at <https://www.evergreen.edu/access>.

Conduct and conflict resolution: Discuss any problems involving others in the learning community directly with the individuals involved (so long as the concerned party feels safe doing so). Respect for others is fundamental to an open, free, and educational dialogue. All students are expected to support and contribute to a well-functioning MPA classroom and learning community. Behavior that disrupts the learning community may be grounds for disciplinary action, including dismissal from the MPA program. All students will be held accountable for maintaining the highest of academic standards. We will abide by the social contract: WAC 174-121-010 College philosophy. We will abide by the student conduct code (including academic integrity and plagiarism): Chapter 174- 123 WAC, Student Conduct Code & Grievance/Appeals Process. We will abide by the non-discrimination policies and procedures at TESC.

Guest policy: Guests are welcome to visit our learning community during class time with discretionary approval from course faculty in advance of the requested visit. It is the host student's responsibility to contact the faculty with details about the requested guest visit and await approval. Guests must abide by all social contract conduct code, and nondiscrimination policy guidelines as aforementioned in this syllabus.

Unexpected class cancellation or delay: If class is cancelled or delayed, a message will be posted on our course Canvas site as soon as possible. If it is a campus wide cancellation, call 360 867 6000 for updates.

Final Mini Research Project

The purpose of this mini research project is for you to gain hands on skills in quantitative data analysis and data communication. You're going to find a topic that you are interested in, pose a research question and answer it using the microdata from American Community Survey (ACS) or other secondary data that you choose. You can work on this project **on your own** or **with another student colleague**.

Deliverables:

There are **three deliverables of two different types** for this project, written, and verbal and another deliverable either written or verbal to a different audience.

A **written** deliverable is a **5-7-page (or 7 -14 page if working with another colleague) report** (double space, font 12, including tables and graphs) for your research. In your report, you are going to include a brief literature review with 3 academic sources on the topic you have chosen, your research question, data analysis, discussion and conclusion. In your research report, also include reflections on the pros and cons of the measures you used in your research to answer your research question and offer recommendations on how to improve them. Optional is a reflection on the process of your research and the choices you made along the way and your learning through doing the project. **In your report, you should include tables and graphs constructed using Excel or Google Spreadsheet or other data processing programs.**

A verbal deliverable is a **recorded presentation** to an academic audience (*7 minutes per person or 11 for a two-person team*) or *any other format you think suitable as long as it is an oral presentation.*

The third deliverable can be either oral or written, but geared toward a lay audience that you identify. A written one can be policy memo to a policy maker. An oral presentation can be a short podcast. Accompany this third deliverable with a writer's note or presenter's note.

Find a topic you are interested in and formulate a research question that examines the relationship between two variables e.g. housing status and race/ethnicity in Thurston county. Find the relevant data from ACS website and conduct your data analysis using Excel or other statistical software. Data analysis can include frequency distribution.

Time line:

4/30. Submit your project topic. Give a rationale of why you choose this topic and what you expect to get out of it. Identify the data source that you will be using to answer your research question. Identify specific variables in the data source that you can use to answer your research question.

5/7. Submit your literature review.

5/21. Submit major data analysis findings. Organize your data using tables, graphs, accompanied with simple narrative highlighting your findings. The focus of your analysis should be on the main message or whether your data support your hypothesis if you are doing hypothesis testing.

5/28. Submit draft report.

6/4. Submit final report and final presentation. **One submission per group.**